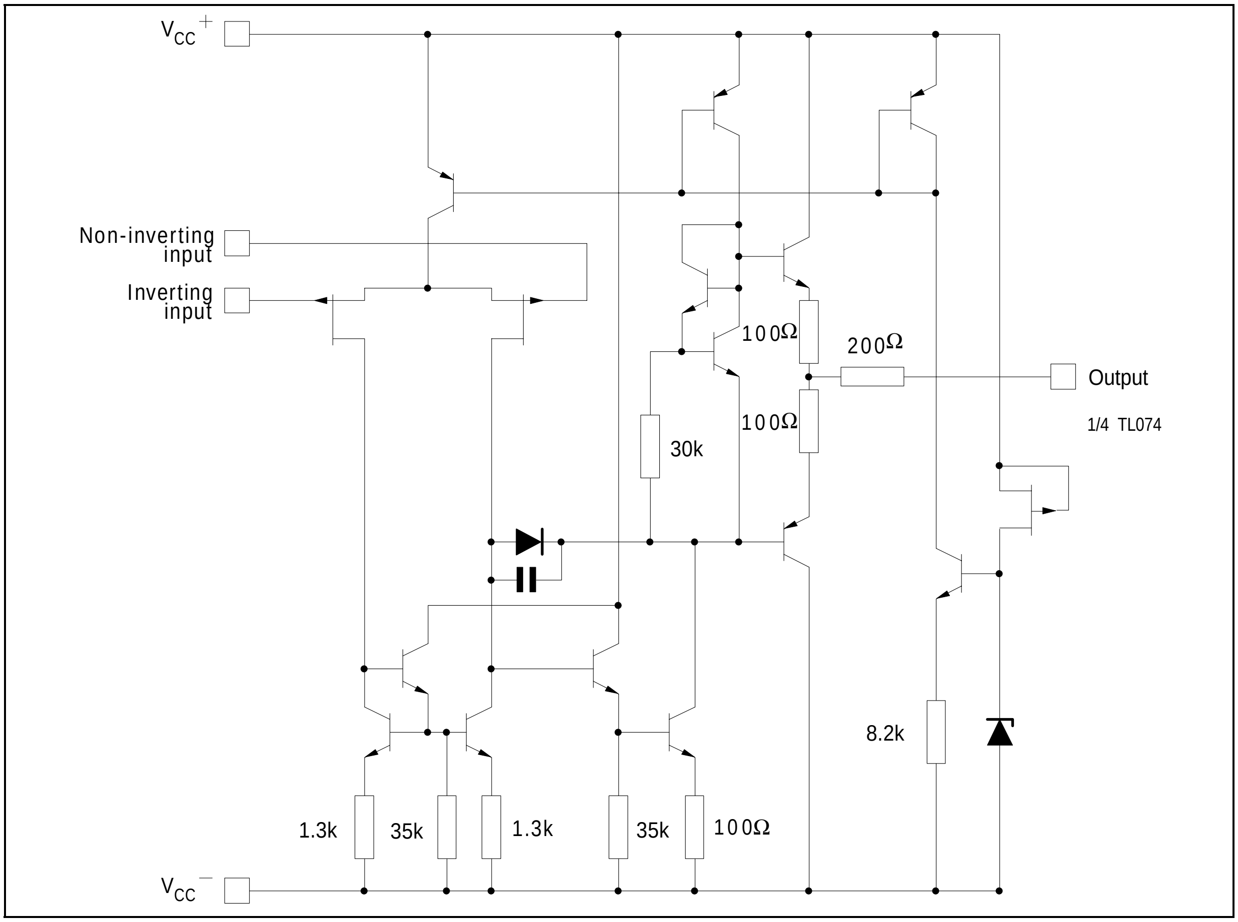
SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	TL074M, AM, BM	TL074I, AI, BI	TL074C, AC, BC	Unit
V_{CC}	Supply voltage - note 1)	±18			V
V_i	Input Voltage - note 2)	±15			V
V_{id}	Differential Input Voltage - note 3)	±30			V
P_{tot}	Power Dissipation	680			mW
	Output Short-circuit Duration - note 4)	Infinite			
T_{oper}	Operating Free-air Temperature Range	-55 to +125	-40 to +105	0 to +70	°C
T_{stg}	Storage Temperature Range	-65 to +150			°C

1. All voltage values, except differential voltage, are with respect to the zero reference level (ground) of the supply voltages where the zero reference level is the midpoint between V_{CC}^+ and V_{CC}^-.
2. The magnitude of the input voltage must never exceed the magnitude of the supply voltage or 15 volts, whichever is less.
3. Differential voltages are the non-inverting input terminal with respect to the inverting input terminal.
4. The output may be shorted to ground or to either supply. Temperature and/or supply voltages must be limited to ensure that the dissipation rating is not exceeded

ELECTRICAL CHARACTERISTICS

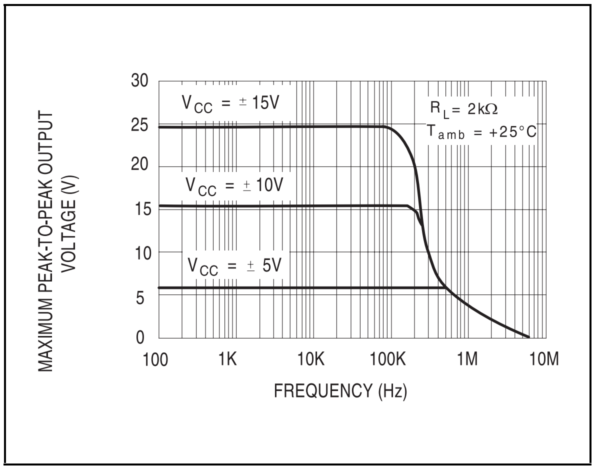
V_{CC} = ±15V, T_{amb} = +25°C (unless otherwise specified)

Symbol	Parameter	TL074I,M,AC,AI,AM, BC,BI,BM			TL074C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{io}	Input Offset Voltage (R_s = 50Ω) T_{amb} = +25°C TL074 TL074A TL074B $T_{min} \leq T_{amb} \leq T_{max}$ TL074 TL074A TL074B		 3 3 1	 10 6 3 13 7 5		 3	 10 13	mV
DV_{io}	Input Offset Voltage Drift		10			10		μV/°C
I_{io}	Input Offset Current - note 1) T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$		 5	 100 4		 5	 100 10	 pA nA
I_{ib}	Input Bias Current -note 1 T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$		 20	 200 20		 30	 200 20	 pA nA
A_{vd}	Large Signal Voltage Gain (R_L = 2kΩ, V_o = ±10V) T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$	 50 25	 200		 25 15	 200		V/mV
SVR	Supply Voltage Rejection Ratio (R_S = 50Ω) T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$	 80 80	 86		 70 70	 86		dB
I_{CC}	Supply Current, no load, per amplifier T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$		 1.4	 2.5 2.5		 1.4	 2.5 2.5	mA
V_{icm}	Input Common Mode Voltage Range	±11	+15 -12		±11	+15 -12		V
CMR	Common Mode Rejection Ratio (R_S = 50Ω) T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$	 80 80	 86		 70 70	 86		dB
I_{os}	Output Short-circuit Current T_{amb} = +25°C $T_{min} \leq T_{amb} \leq T_{max}$	 10 10	 40	 60 60	 10 10	 40	 60 60	mA
$\pm V_{opp}$	Output Voltage Swing T_{amb} = +25°C RL = 2kΩ RL = 10kΩ $T_{min} \leq T_{amb} \leq T_{max}$ RL = 2kΩ RL = 10kΩ	 10 12 10 12	 12 13.5		 10 12 10 12	 12 13.5		V
SR	Slew Rate (T_{amb} = +25°C) V_{in} = 10V, R_L = 2kΩ, C_L = 100pF, unity gain	 8	 13		 8	 13		V/μs
t_r	Rise Time (T_{amb} = +25°C) V_{in} = 20mV, R_L = 2kΩ, C_L = 100pF, unity gain		 0.1			 0.1		μs
K_{ov}	Overshoot (T_{amb} = +25°C) V_{in} = 20mV, R_L = 2kΩ, C_L = 100pF, unity gain		 10			 10		%
GBP	Gain Bandwidth Product (T_{amb} = +25°C) V_{in} = 10mV, R_L = 2kΩ, C_L = 100pF, f= 100kHz	 2	 3		 2	 3		MHz
R_i	Input Resistance		10^{12}			10^{12}		Ω

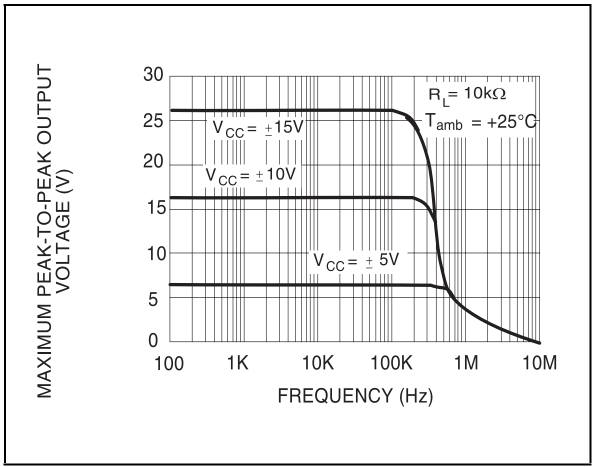
Symbol	Parameter	TL074I,M,AC,AI,AM, BC,BI,BM			TL074C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
THD	Total Harmonic Distortion (T_{amb} = +25°C) f= 1kHz, R_L = 2kΩ,C_L = 100pF, A_v = 20dB, V_o = $2V_{pp}$		0.01			0.01		%
e_n	Equivalent Input Noise Voltage R_S = 100Ω, f = 1KHz		15			15		$\frac{nV}{\sqrt{Hz}}$
∅m	Phase Margin		45			45		degrees
V_{o1}/V_{o2}	Channel separation A_v = 100		120			120		dB

1. The input bias currents are junction leakage currents which approximately double for every 10°C increase in the junction temperature.

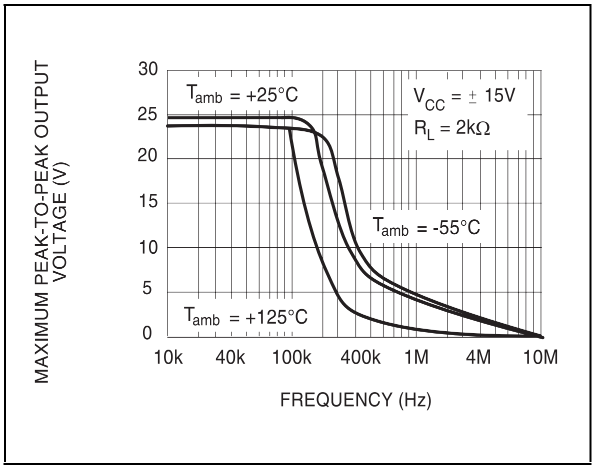
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus FREQUENCY



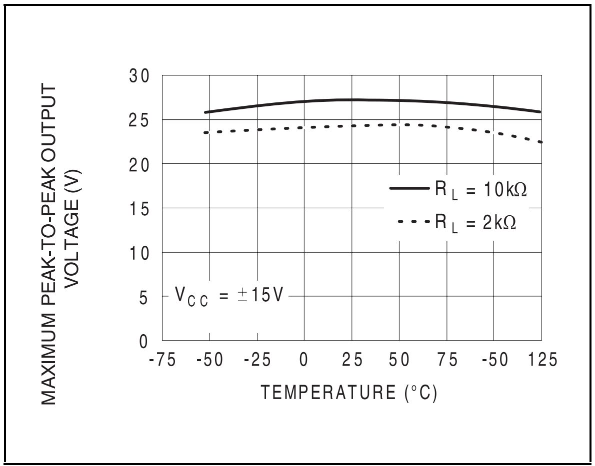
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus FREQUENCY



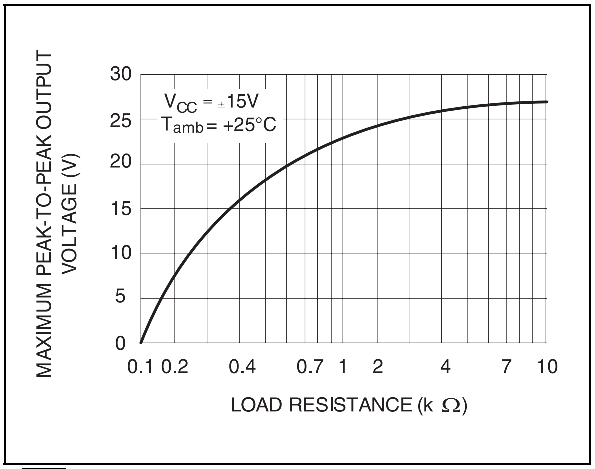
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus FREQUENCY



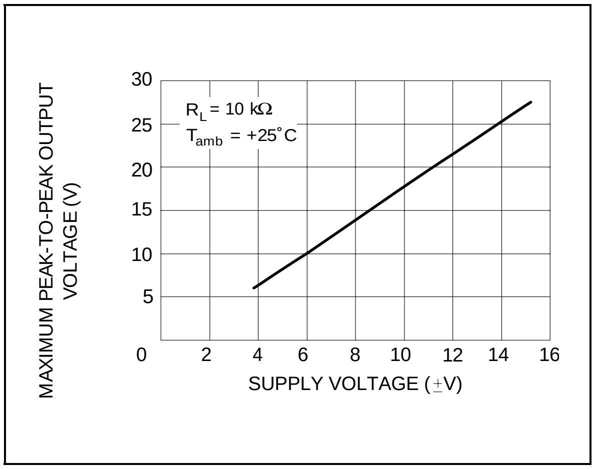
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus FREE AIR TEMP.



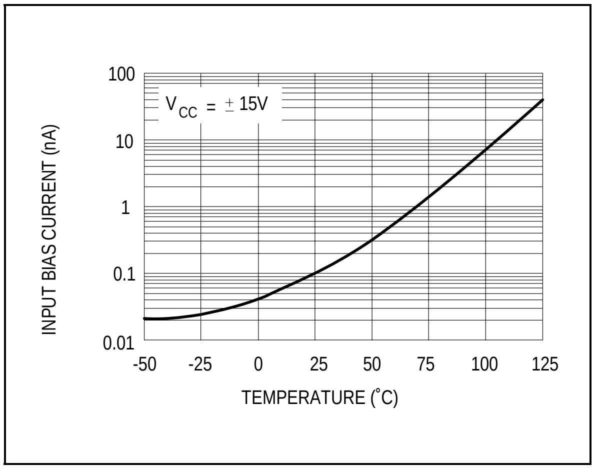
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus LOAD RESISTANCE



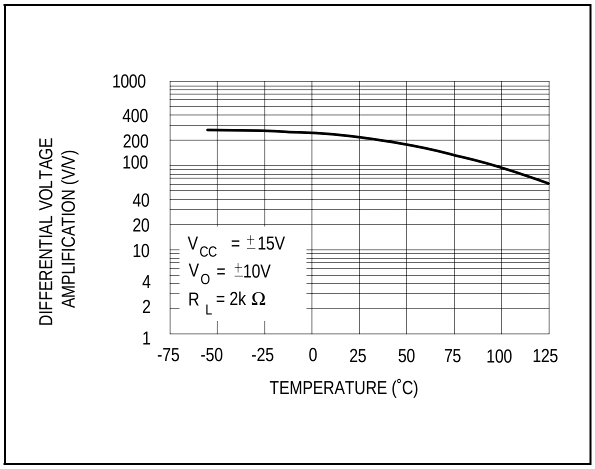
MAXIMUM PEAK-TO-PEAK OUTPUT VOLTAGE versus SUPPLY VOLTAGE



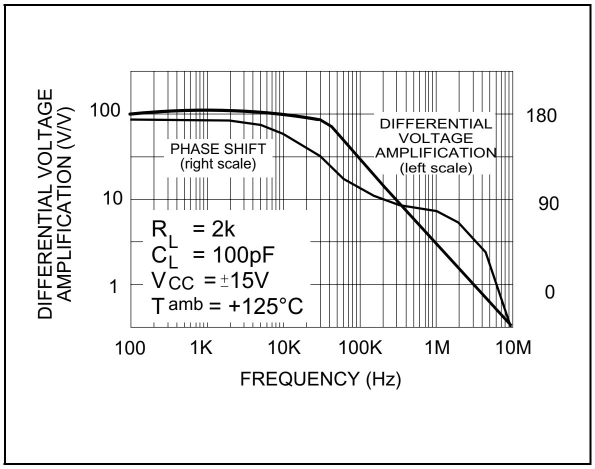
INPUT BIAS CURRENT versus FREE AIR TEMPERATURE



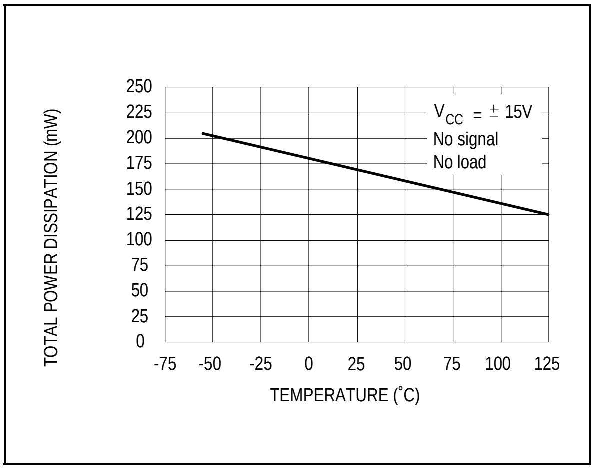
LARGE SIGNAL DIFFERENTIAL VOLTAGE AMPLIFICATION versus FREE AIR TEMP.



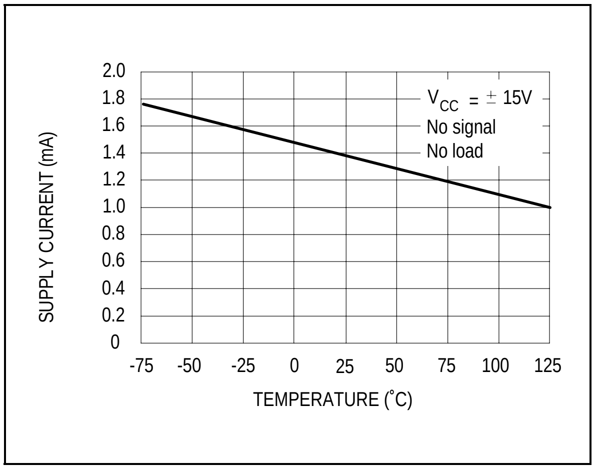
LARGE SIGNAL DIFFERENTIAL VOLTAGE AMPLIFICATION AND PHASE SHIFT versus FREQUENCY



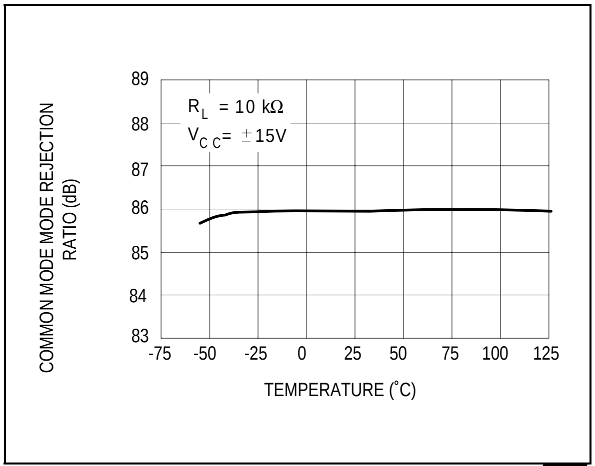
TOTAL POWER DISSIPATION versus FREE AIR TEMPERATURE



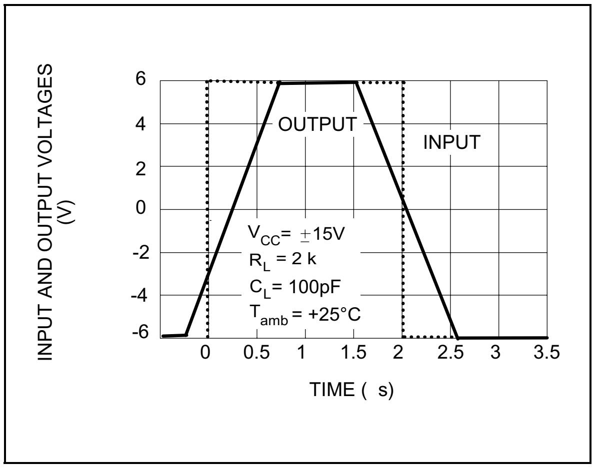
SUPPLY CURRENT PER AMPLIFIER versus FREE AIR TEMPERATURE



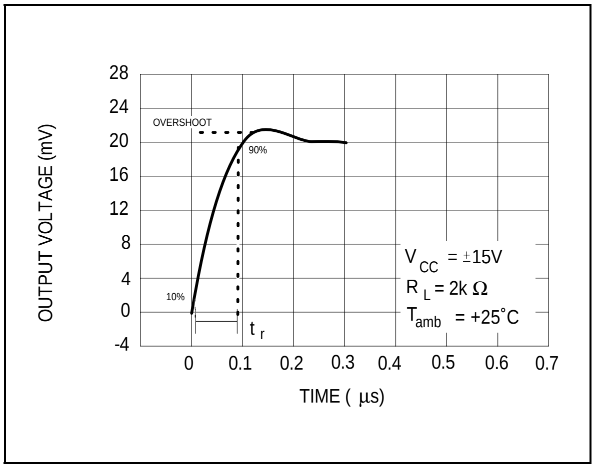
COMMON MODE REJECTION RATIO versus FREE AIR TEMPERATURE



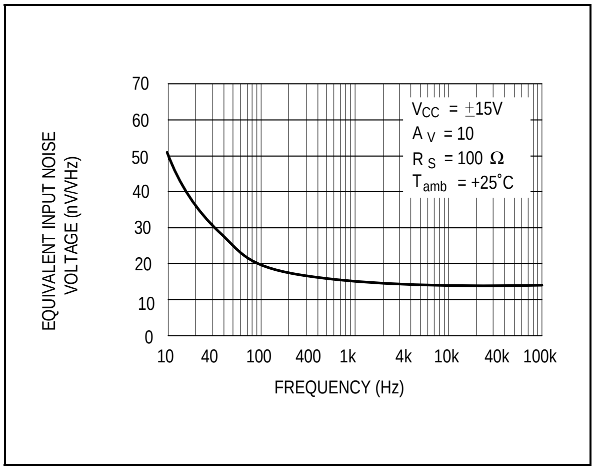
VOLTAGE FOLLOWER LARGE SIGNAL PULSE RESPONSE



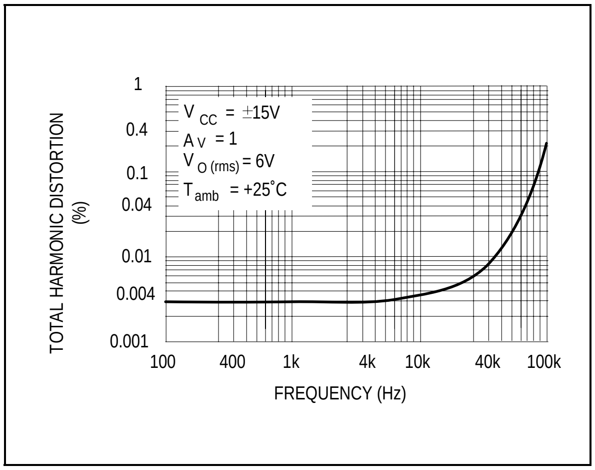
OUTPUT VOLTAGE versus ELAPSED TIME



EQUIVALENT INPUT NOISE VOLTAGE versus FREQUENCY



TOTAL HARMONIC DISTORTION versus FREQUENCY



PARAMETER MEASUREMENT INFORMATION

Figure 1 : Voltage Follower

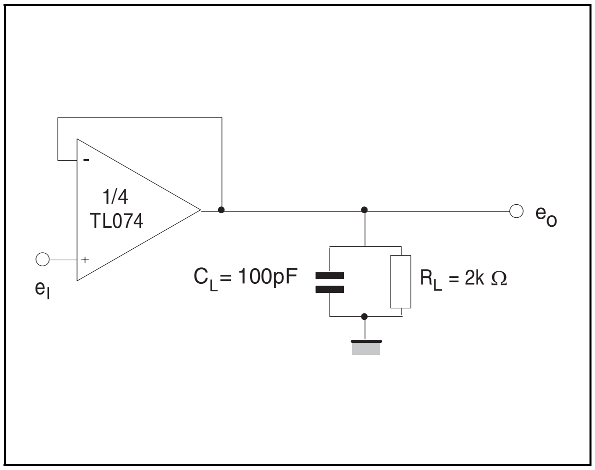
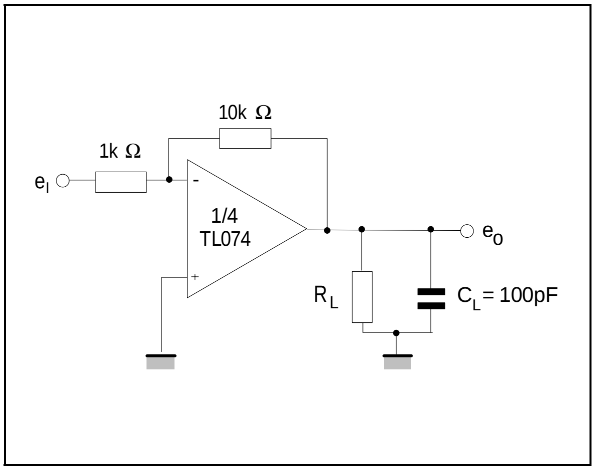
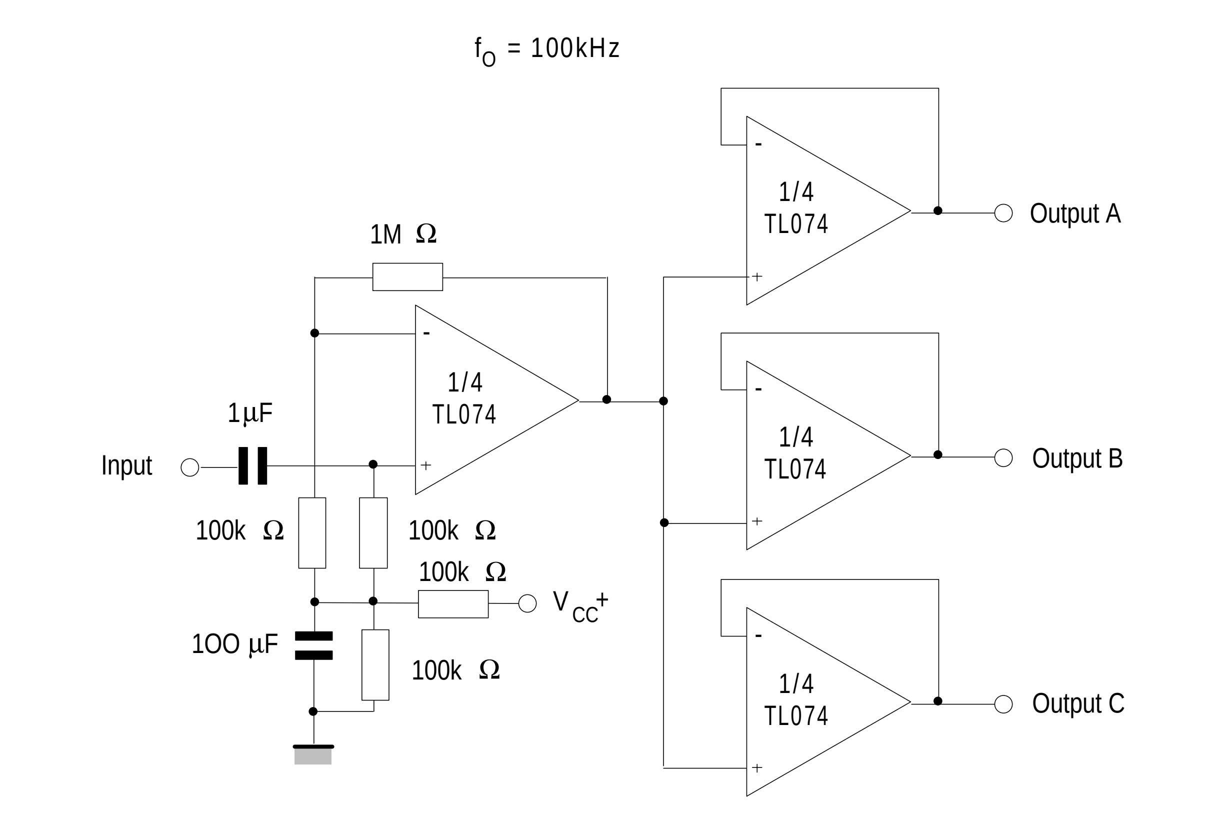


Figure 2 : Gain-of-10 Inverting Amplifier



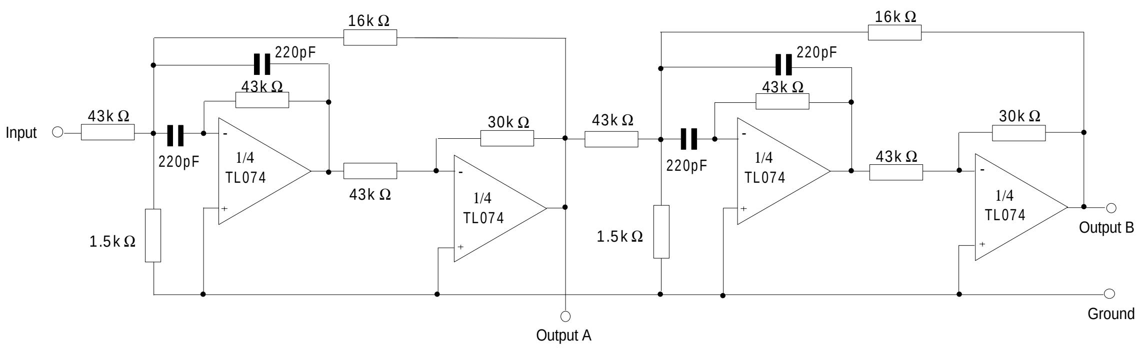
TYPICAL APPLICATIONS

AUDIO DISTRIBUTION AMPLIFIER

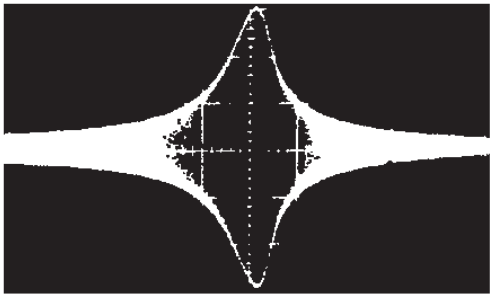


TYPICAL APPLICATIONS (continued)

POSITIVE FEEDBACK BANDPASS FILTER

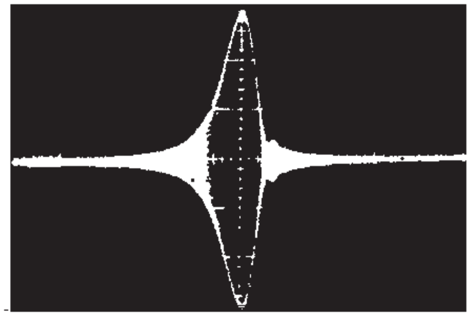


OUTPUT A



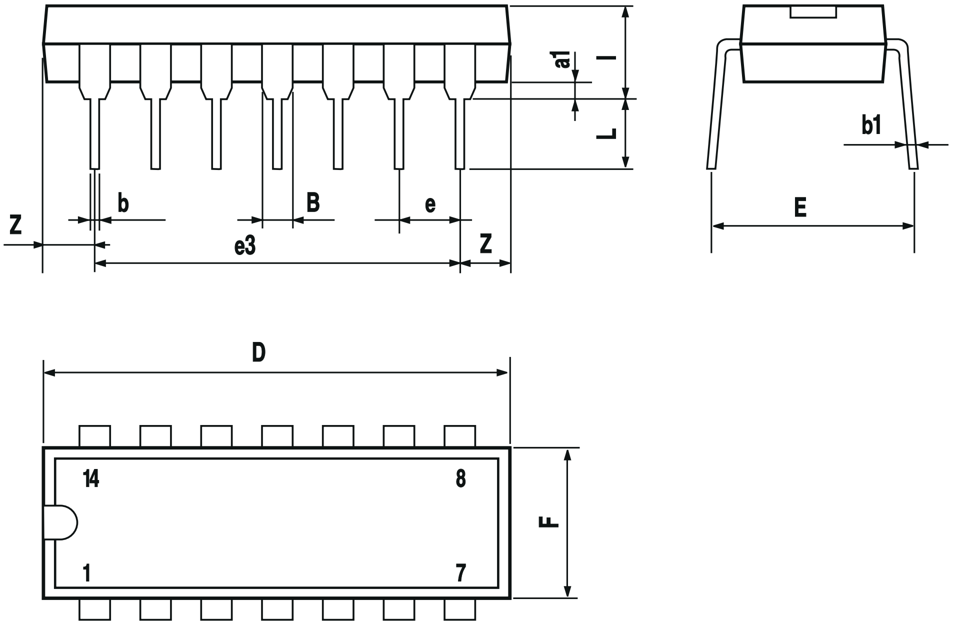
SECOND ORDER BANDPASS FILTER
fo = 100kHz; Q = 30; Gain = 16

OUTPUT B



CASCADED BANDPASS FILTER
fo = 100kHz; Q = 69; Gain = 16

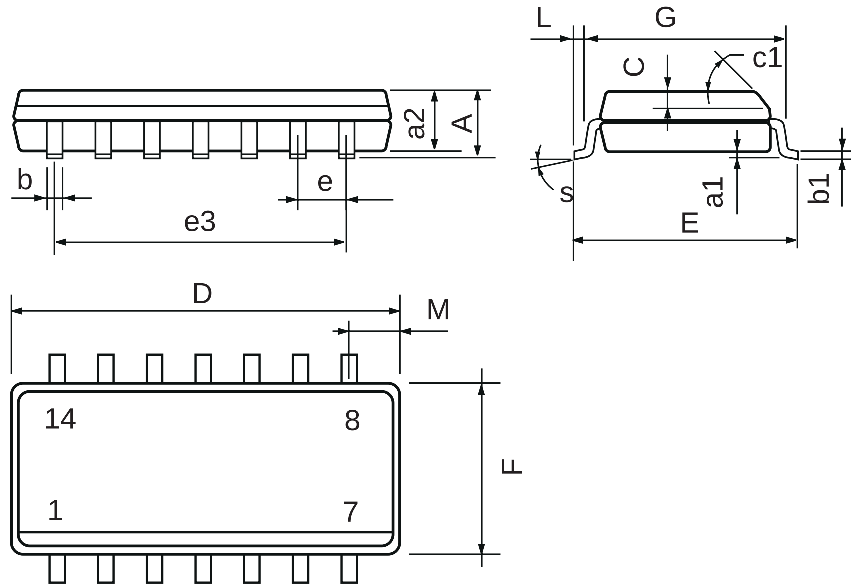
PACKAGE MECHANICAL DATA
14 PINS - PLASTIC DIP



Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.51			0.020		
B	1.39		1.65	0.055		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		15.24			0.600	
F			7.1			0.280
i			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100

PACKAGE MECHANICAL DATA

14 PINS - PLASTIC MICROPACKAGE (SO)



Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.2	0.004		0.008
a2			1.6			0.063
b	0.35		0.46	0.014		0.018
b1	0.19		0.25	0.007		0.010
C		0.5			0.020	
c1	45° (typ.)					
D (1)	8.55		8.75	0.336		0.344
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		7.62			0.300	
F (1)	3.8		4.0	0.150		0.157
G	4.6		5.3	0.181		0.208
L	0.5		1.27	0.020		0.050
M			0.68			0.027
S	8° (max.)					

Note : (1) D and F do not include mold flash or protrusions - Mold flash or protrusions shall not exceed 0.15mm (.066 inc) ONLY FOR DATA BOOK.

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.
© The ST logo is a registered trademark of STMicroelectronics

© 2001 STMicroelectronics - Printed in Italy - All Rights Reserved
STMicroelectronics GROUP OF COMPANIES
Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia - Malta - Morocco
Singapore - Spain - Sweden - Switzerland - United Kingdom
© http://www.st.com

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.